

PATENT ABSTRACTS OF JAPAN

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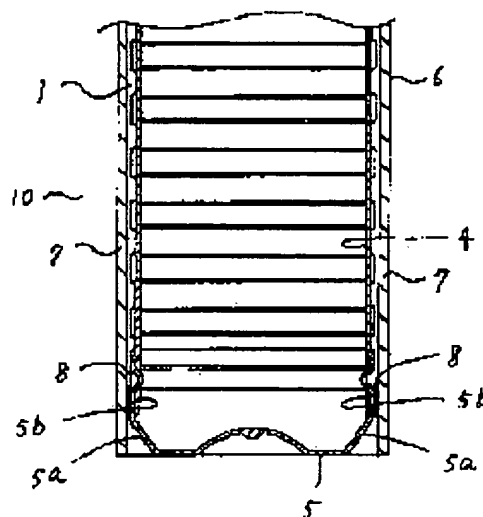
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(54) COMPOSITE CONTAINER

(57)Abstract:

PURPOSE: To reinforce a body part of a container body with a paper tube so that it can be easily set and hardly slip off by a method wherein the paper tube is integrally formed with a thin-wall plastic container body through a heat-sensitive adhesive applied to the inner peripheral surface of the paper tube.

CONSTITUTION: Firstly, a paper tube 6 is assembled in a cylindrical form. Next, a hot melt adhesive 8 in a melt state under high-temperature conditions is spot bonded to the inner surfaces of right and left side plates 7, 7. A thin-wall bottle 1 filled with content solution is inserted from above the paper tube 6. At that time, since a bottom part 5 of the thin-wall bottle 1 is tapered and a part lower than a boundary line between the body part 4 and the bottom part 5 is formed by a slant wall part 5a inclined at an angle of 30 degrees, the bottle 1 can be smoothly passed in the paper tube 6 without adhesion of the adhesive 8 to the slant wall part 5a. Additionally, since a 5mm part upper than the boundary between the body part 4 and the bottom part 5 is formed by a vertical wall part 5b, a raised part of the hot melt adhesive 8 is smoothed by the vertical wall part 5b for the increase of a bonding area.



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CLAIMS

[Claim(s)]

[Claim 1]A complex container which is provided with the following and characterized by unifying a package body and a cardboard tube by thermosensitive adhesives applied to inner skin of a cardboard tube.

A package body which consists of a plastic of thin meat.

A cardboard tube of this package body which reinforces a drum section peripheral surface at least.

[Claim 2]In the complex container according to claim 1, a pars basilaris ossis occipitalis of said package body tapers off, and it is formed in shape, And a complex container which the range of not less than 5 mm of upper parts is constituted from a boundary line of a drum section and a pars basilaris ossis occipitalis by a cardboard tube and slide contact wall to stick, and is characterized by a cardboard tube and a package body having pasted up in this slide contact portion.

[Claim 3]A complex container, wherein a lower part is constituted from a boundary line of said drum section and a pars basilaris ossis occipitalis by inclined wall part of 70 degrees or less 30 degrees or more in the complex container according to claim 2.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application]In this invention, it is related with the plastic container which accommodates a liquid seasoning, liquid detergent, shampoo rinse, etc.

Therefore, in order to attain thinning especially for saving resources and to reinforce the intensity, it is a complex container equipped with a cardboard tube.

[0002]

[Description of the Prior Art]Conventionally, the container which made plastic resin, such as polyethylene and polypropylene, bottle shape by blow molding etc. is used abundantly. However, these days, reduction of the amount of the plastic resin used of these containers and the request of collection by type have come to be carried out from the standpoint of environmental protection. Then, although it is possible to carry out the thinning of the container for reducing the amount of the plastic resin used, it becomes that a container generally becomes soft and it is hard to become independent in this case, or becomes difficult to hold.

[0003]The container which reinforced the plastic bottle of thin meat with the cardboard tube that such a problem should be avoided is proposed. For example, what was indicated by Patent Publication Heisei No. 505949 [six to] forms the crevice which goes caudad with approximately quadrangular shape and inclines in the method of the inside of a container, and forms a flap in the upper bed of a cardboard tube, the drum section of a plastic bottle is made to engage with this crevice, and the shoulder of a bottle bulges in the method of outside, and it forms the level difference in it.

It is the plastic container package that the omission to the upper part of a cardboard tube can be prevented.

[0004]However, a flap is forced on the wall of a crevice using the above-mentioned conventional example being formed in the shape toward which the crevice of a container goes caudad and inclines in the method of the inside of a container, Since a container is dented by slight power when engagement power is heightened and especially the container is formed in thin meat of the repulsive force, it is easy to escape from a flap, and there is a problem of being easy to separate from a cardboard tube.

[0005]

[Problem(s) to be Solved by the Invention]Then, this invention stands on the standpoint of the environmental protection of contributing to reduction of the amount of the plastic resin used, and the drum section of a package body is reinforced by a cardboard tube, and let it be a technical problem to provide the complex container which is easy to insert and from which it is hard to escape.

[0006]

[Means for Solving the Problem]In order to solve an aforementioned problem, this invention consists of a package body which consists of a plastic of thin meat, and a cardboard tube of this package body which reinforces a drum section peripheral surface at least, and provides a complex container, wherein a package body and a cardboard tube are unified by thermosensitive adhesives applied to inner skin of a cardboard tube. And it is preferred that a pars basilaris ossis occipitalis of a package body tapers off, and it is formed in shape, and the range of not less than 5 mm of upper parts was constituted from a boundary line of a drum section and a pars basilaris ossis occipitalis by a cardboard tube and slide contact wall to stick, and a cardboard tube and a package body have pasted up in this slide contact portion. It is more preferred than a boundary line of a drum section and a pars basilaris ossis occipitalis that a lower part is constituted by inclined wall part of 70 degrees or less 30 degrees or more.

[0007]As a material of a package body which consists of a plastic of thin meat, Polyethylene terephthalate, high density polyethylene, polyester, High barrier nature resin, such as thermoplastics, such as polypropylene, and a copolymer which uses acrylonitrile or a methacrylonitrile as the main ingredients, Or what blended or laminated gas barrier nature resin, such as an ethylene-vinylacetate copolymer saponification thing and aromatic nylon, can be used for thermoplastics.

[0008]As a material of a cardboard tube, it is a paperboard of thickness about $300 - 400 \text{ g/m}^2$, and can be used [for the purpose of recycled paper or paper which carried out waterproof processing].

[0009]As thermosensitive adhesives, it is preferred that blocking strength uses hot melt adhesive more than 15 kg/cm^2 .

[0010]

[Function]A package body is inserted in the inner direction of the cardboard tube to which

thermosensitive adhesives were applied beforehand in this invention.

Therefore, a package body and a cardboard tube are unified.

And even if the residue in a package body decreases by pour and it changes, there is no possibility that a package body may shift from a cardboard tube.

[0011]If the pars basilaris ossis occipitalis of a package body tapers off, it is formed in shape and the range of not less than 5 mm of upper parts is constituted from a boundary line of a drum section and a pars basilaris ossis occipitalis by the slide contact wall, when inserting a package body into a cardboard tube, thermosensitive adhesives will be drawn through and adhesion area will be expanded.

[0012]If the lower part is constituted from a boundary line of the drum section of a package body, and a pars basilaris ossis occipitalis by the inclined wall part of 70 degrees or less 30 degrees or more, a package body can be inserted into a cardboard tube, without thermosensitive adhesives adhering to a pars basilaris ossis occipitalis.

[0013]

[Example]The example of this invention is described based on a drawing below. The package body of this example is the translucent light-gage bottle produced with the injection stretch blow molding molding method using polyethylene terephthalate resin. A light-gage bottle is first explained using drawing 3 and drawing 4. The light-gage bottle 1 comprises the regio oralis 2 which has a thread part, the shoulder 3, and the drum section 4 and the pars basilaris ossis occipitalis 5.

[0014]As a molding procedure, test tube-like mold goods (it is called preforming below) are first fabricated by injection molding. It comprises regio oralis and a cylinder part, the drum section 4 and the pars basilaris ossis occipitalis 5 of a bottle extend a cylinder part in all directions, and this preforming is formed. Subsequently, this preforming was inserted into the blow mold, the extension blow was carried out, it extended in the lengthwise direction and the transverse direction enough, and the light-gage bottle 1 was formed in them. Thus, since gas barrier property, a smell retaining property, intensity, etc. improve by using an injection stretch blow molding molding method, the resin amount to be used is substantially reducible.

[0015]The fabricated light-gage bottle 1 is a section abbreviation quadrangle, the shoulder 3 inclines gently-sloping and two or more slots 4a and flat parts 4b have expressed it by turns in the transverse direction at the drum section 4 of bellows shape. The fluting 9 for making it easy to crush in the both sides side of the light-gage bottle 1 is formed only on the flat part 4b. This fluting 9 descended from the shoulder 3 to straight line shape, and has branched to the A-shape in the lower end.

[0016]The vertical wall section 5b is formed in the range of 5-mm upper length from the boundary line of the drum section 4 and the pars basilaris ossis occipitalis 5, and the pars

basilaris ossis occipitalis 5 is formed in a tapered form, and the inclined wall part 5a whose lower part is 30 degrees is formed from the boundary line of the drum section 4 and the pars basilaris ossis occipitalis 5. the thing corresponding to mutual in both since it is important that the vertical wall section 5b sticks with a cardboard tube -- it carries out. That is, the slide contact wall of the invention in this application is not limited to the vertical wall section 5b, also includes what is the inclined form which inclines toward the method of the outside of a container, and the curved thing, and should just use what has a wall surface of the shape also corresponding to the cardboard tube to this.

[0017]When the size and thickness of this light-gage bottle 1 were measured, the used resin amount is 38g and, as for full injection volume, the thickness of 2000 ml and the drum section 3 was extremely formed in thin meat with 140 micrometers - 250 micrometers. If it was in the bottle with a conventional capacity of 2000 ml, about 80g of resin amounts were needed, as compared with having formed the thickness of the drum section in 500 micrometers - 600 micrometers, the resin amount became or less about 1 / 2, and thickness of the drum section was also able to be made thin to about 1 / 3 - 1/2.

[0018]The cardboard tube 6 performs a printing process and a surface treatment using the thing of the thickness of $300 - 400 \text{ g/m}^2$ with the paperboard which consists of recycled paper. A bend line is made to intervene, a front board, a side face plate, a back plate, a side face plate, and edge-left-for-applying-paste parts are formed successively, and BURANKUSU (not shown) of the cardboard tube 6 changes.

An edge-left-for-applying-paste part is pasted up, and it assembles to tubed.

[0019]When the cardboard tube 6 is formed in tubed, inner circumference is set up so that it may be a size of a mere, somewhat large grade and a crevice may hardly (preferably 1 mm or less) arise between a cardboard tube and a light-gage bottle rather than the outer diameter of a light-gage bottle. Since the cardboard tube 6 has wrap length for from the lower end of the light-gage bottle 1 to the upper bed of the drum section 3, it can raise the buckling strength of the whole complex container.

[0020]As thermosensitive adhesives, as for blocking strength, it was preferred to use the thing more than 15 kg/cm^2 , and Oriental Morton 903 [trade name TOPCO-P] which is hot melt adhesive was used in this example. Oriental Morton 906 [same / trade name TOPCO-P] can also be used for others.

[0021]As a wearing procedure to the cardboard tube 6 of the light-gage bottle 1, Assembled the cardboard tube 6 from BURANKUSU to tubed first, the inner surface of the side face plates 7 and 7 of right and left [the hot melt adhesive 8 which exists under an elevated temperature subsequently to a molten state] was made to carry out point adhesion, and the light-gage bottle 1 which filled up the dish with content fluid for time was inserted from the upper part of

the cardboard tube 6 (refer to drawing 2). Since the pars basilaris ossis occipitalis 5 of the light-gage bottle 1 is formed in a tapered form at this time and the lower part comprises the inclined wall part 5a which is 30 degrees from the boundary line of the drum section 4 and the pars basilaris ossis occipitalis 5, Since it passes through the inside of the cardboard tube 6 smoothly and the vertical wall section 5b is formed over 5 mm of upper parts from the boundary line of the drum section 4 and the pars basilaris ossis occipitalis 5, without the adhesives 8 adhering to the inclined wall part 5a of this pars basilaris ossis occipitalis, While this vertical wall section 5b drew the climax portion of the hot melt adhesive 8 through and extended adhesion area, it pasted up (refer to drawing 1).

[0022]The produced complex container 10 was unified firmly, without the cardboard tube 6 falling out also in the vibration and the drop test at the time of transportation. Although it had the complex container 10 in the hand, and was made reverse and small-quantity [every] pour was repeated, it has been used without the light-gage bottle's 1 not having changed to the last, and the light-gage bottle 1 escaping from the cardboard tube 6. After use was divided into the light-gage bottle 1 and the cardboard tube 6 when the light-gage bottle 1 was pulled up, pressing down the cardboard tube 6 caudad strongly. When discarding, the cardboard tube 6 was folded evenly, and the drum section 3 of the light-gage bottle 1 was crushed by hand. Since the fluting 9 was formed, it was able to crush more easily than before. And the cardboard tube 6 and the light-gage bottle 1 were discarded independently. Abandonment capacity was able to be conventionally made small substantially.

[0023]

[Effect of the Invention]A package body is inserted in the inner direction of the cardboard tube to which thermosensitive adhesives were applied beforehand in this invention.

Therefore, a package body and a cardboard tube are unified.

And even if the residue in a package body decreases by pour and it changes, a package body does so the effect that there is no possibility of shifting, from a cardboard tube. Since thermosensitive adhesives are applied to the direction of the cardboard tube instead of a package body, when the thermosensitive adhesives under an elevated temperature adhere, the effect that the package body of thin meat can be prevented from changing is done so. If the pars basilaris ossis occipitalis of a package body tapers off, it is formed in shape and the range of not less than 5 mm of upper parts is constituted from a boundary line of a drum section and a pars basilaris ossis occipitalis by the cardboard tube and the slide contact wall to stick, when inserting a package body into a cardboard tube, thermosensitive adhesives will be drawn through and adhesion area will be expanded. If the lower part is constituted from a boundary line of the drum section of a package body, and a pars basilaris ossis occipitalis by the inclined wall part of 70 degrees or less 30 degrees or more, a package body can be inserted into a cardboard tube, without thermosensitive adhesives adhering to a pars basilaris ossis

occipitalis. Thus, this invention is the practically outstanding complex container.

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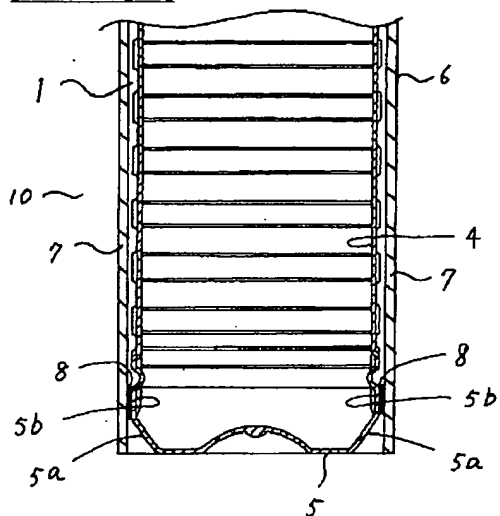
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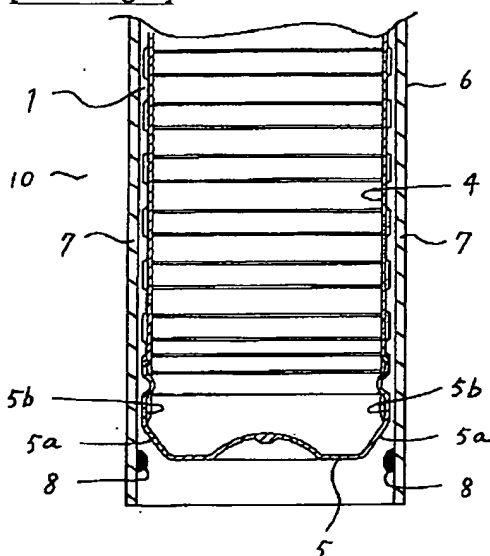
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DRAWINGS

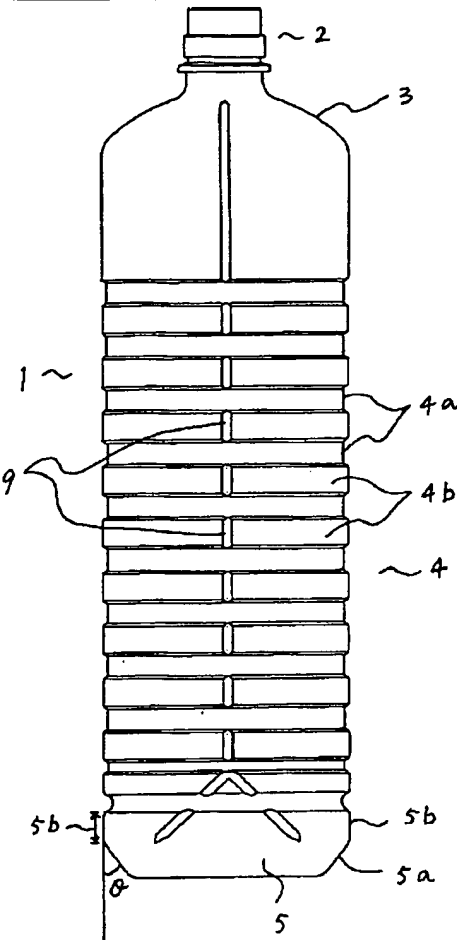
[Drawing 1]



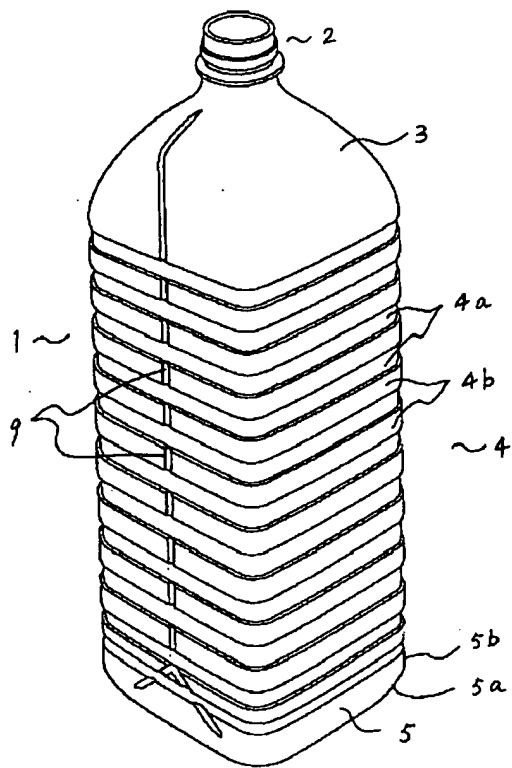
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]